

2005-06 HUNTING SEASONS IN REVIEW

Waterfowl hunting opportunity in Missouri began with the September teal season and continued through January. Missouri duck seasons were 60 days in length for the 9th consecutive year in each of the three zones. In response to hunters' preferences for later seasons, the 2005-06 season structures were similar to 2004-05, the latest among modern duck seasons.

For the 4th consecutive year Canada goose hunters could hunt for a total of 77 days. The additional days enable early season harvest of resident Canada geese without putting additional pressure on interior populations of Canada geese. In years past, the Canada goose season structure only allowed 30 days after 30 November in the North and Middle zones. In 2005-06 the number of days allowed after 30 November increased to 40 in these zones. This gave hunters in the North and Middle zones the first opportunity to hunt during the Christmas-New Years holiday season through the end of January. Missouri also returned to a 2-bird bag limit during the late season segment.

Table 1. 2005-06 waterfowl seasons.

Zone	Youth Hunt	Ducks	Canvasbacks	Canada Geese and Brant	White-fronted Geese	Snow/ Blue/ Ross's Geese
NORTH	10/22-10/23	10/29-12/27	10/29-11/27	10/1-10/09 10/29-11/27 12/23-1/29	10/29-1/22	10/29-1/29
MIDDLE	10/29-10/30	11/5-1/3	11/5-12/4	10/1-10/11 11/5-11/30 12/23-1/31	11/5-1/29	11/5-1/31
SOUTH	11/19-11/20	11/25-1/23	12/25-1/23	10/1-10/9 11/25-1/31	11/5-1/29	11/5-1/31
SOUTH-EAST	SAME AS MIDDLE	SAME AS MIDDLE	SAME AS MIDDLE	SAME AS SOUTH	SAME AS SOUTH	SAME AS SOUTH
The Conservation Order for light geese will be in effect from 30 January-30 April in the North Zone, and from 1 February-30 April in the Middle, South and Southeast Zones. Snow, blue, and Ross's geese only may be taken during the Conservation Order. Shooting hours are ½ hour before sunrise to ½ hour after sunset during the Conservation Order.						

Weather, Habitat and Migrations:

Hunting conditions, duck abundance, and hunter success were highly variable during the 2005-06 waterfowl season. Habitat was primarily limited to public and private areas with water pumping capabilities. Natural food and crop conditions were fair to good on most wetland areas. Mild and dry conditions challenged hunters early in the season and cold weather and ice limited hunting opportunity in December. Milder conditions returned in January.

Fall and Winter Habitat:

Summer drought led to concerns that wetland habitat would be negatively impacted. While the drought reduced crop yields in some locations, late summer and early fall rains substantially improved wetland conditions. However, some wetlands in western Missouri experienced late

summer flooding and a subsequent reduction in moist-soil plant seeds that would be available for ducks during the fall. By October, river and reservoir levels were low through much of the state and wetland habitat was mainly found on public and private areas with water pumping capabilities.

Dry conditions during late October, 2005 contrasted the wet conditions of the previous year. Only 55% of the state reported adequate or surplus topsoil moisture ratings in 2005, compared to 94% in 2004. Dry conditions led to an early crop harvest with corn harvest completed nearly 3 weeks ahead of 2004 and 5 days earlier than the 5-year average.

After below normal temperatures during the last week of October, mild conditions returned to Missouri in early November with temperatures 3 to 9 degrees above normal. These warm temperatures came to an abrupt end on 15-16 November when an intense low pressure system moved through the Midwest and left winter-like temperatures in its wake. Low temperatures dropped into the teens through Central Missouri and below freezing in the remainder of the state. Portions of Southeast Missouri received over 4 inches of rain in association with this system, but run-off was limited. The remainder of the state remained dry. Temperatures fluctuated until winter arrived in earnest the last week of November. In Central Missouri, high temperatures plummeted from 64 degrees on 27 November to 33 degrees on 29 November. The temperatures continued their downward decent through 7 December when the high only reached 18 degrees in Central Missouri. By 5 December, ice was over 5 inches thick on shallow water in Northwest Missouri. From 5-10 December, temperatures were 10-30 degrees below normal and most shallow water was ice-covered. Shallow water in the northern two-thirds of the state remained ice-covered until a warming trend began in late December. By 27 December temperatures topped 60 degrees through much of Missouri. These warm, but dry, conditions continued through January. To illustrate the mild January conditions, in Central Missouri temperature topped 60 degrees 8 days, and 50 degrees, another 8 days, and the lows only dipped below freezing on 14 days during the entire month.

Overall, November was the 17th warmest on record (1895-2005) and near normal in terms of precipitation (56th driest on record, 1895-2005). December temperatures were near average (41st coldest on record, 1895-2005), and conditions were dry (12th driest on record, 1895-2005). January was the warmest on record (1895-2006) with near normal precipitation (71st driest, 1895-2005).

Waterfowl Migrations:

Initial influx of blue-winged teal in August and additional migrations during 14-15 September were consistent with long-term average migration timing. A migration event on 15-17 October resulted in the departure of many blue-winged teal and the arrival of green-winged teal, pintails, wigeons, shovelers, gadwalls, and a few mallards. The next migration event occurred with the arrival of a cold front on 19 October. This migration included white-fronted geese, but most did not stop in Missouri. Additional ducks arrived in Missouri on 22-23 October. Mid-October duck numbers on Conservation Areas and National Wildlife Refuges (161,700) were slightly higher than in 2004 (135,300) and 2002 (129,500), but similar to 2003 (167,400). A small migration event occurred on 31 October and included snow geese, white-fronted geese, and ducks.

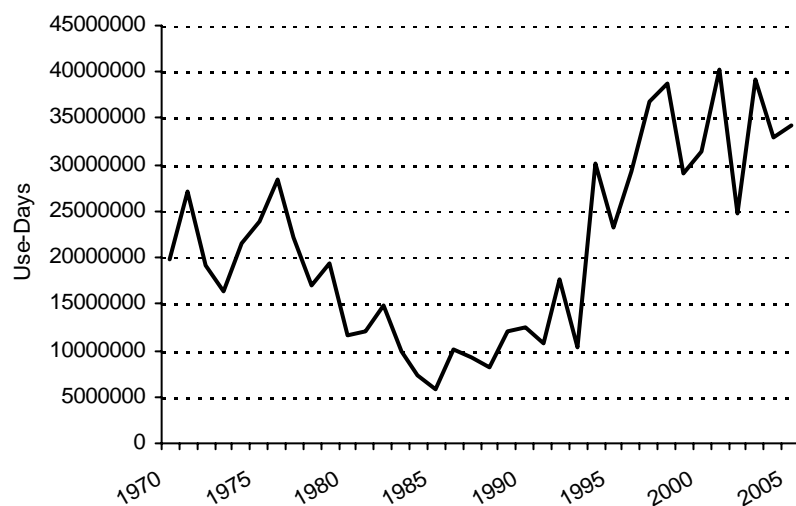
By the first week of November, duck numbers had increased to 239,400 on Conservation Areas and National Wildlife Refuges, which was similar to last year around this time (278,700), but lower than in 2002 (355,200) or 2001 (333,500). Species composition consisted primarily of early season migrants such as pintail, green-winged teal, and gadwall. Two major migrations occurred in November, the first on 15 November and the second on 29 November. The number of ducks counted (639,900) on Conservation Areas and National Wildlife Refuges after 15 November was similar to the peak numbers observed much later in the fall the previous two seasons (654,400 on November 24, 2003 and 658,100 in early December, 2004). Many early season migrants departed and more mallards arrived on 15 November. The migration observed on 29 November resulted in the departure of most remaining early season migrants and the arrival of additional mallards. Species composition on most refuges consisted of over 90% mallards by the first week of December. Duck numbers (565,200) on Conservation Areas and National Wildlife Refuges remained similar to the previous survey (639,900). However, duck distribution within the state changed.

By mid-December, duck numbers declined on Conservation Areas and National Wildlife Refuges (274,300 on 19 December vs. 565,200 on 6 December) and were lower than at this time in 2004 (474,800). Duck numbers declined in the northern portion of the state, but remained similar to the previous survey in Southeast Missouri. Redistribution of birds from shallow water habitat to remaining open water in North Missouri and to points south occurred in late December

and early January. When shallow water habitat thawed in late December, ducks returned to most state waterfowl areas and federal refuges. The 2005-06 Midwinter Waterfowl Survey during 3-6 January reflected duck numbers (572,700) slightly lower than 2004-05 (691,500) and 2003-04 (641,200), but within the range of the last 20 years (85,700-714,000). The entire state was ice free at the time of the Midwinter Survey. By the end of January, managers reported the species composition at most wetland areas was similar to what typically would be present in early March.

Fall Canada goose populations consisted primarily of resident giant Canada geese with migrant EPP Canada geese and giant Canada geese arriving in early December, which was earlier than the last few years. The trend of migrant Canada geese making limited use of state and federal

Duck Use-days on State and Federal Wetland Areas in Missouri, 1970-2005



refuges continued. The high counts on refuges included 8,650 at Squaw Creek on 3 January, 5,800 at Fountain Grove on 6 January, and 4,500 at Swan Lake on 20 December. The Midwinter Survey tally of 148,100 was higher than the previous three years; 112,600 in 2005, 128,200 in 2004, and 132,300 in 2003.

Light goose abundance was similar to previous falls; however, they arrived earlier than in 2004 (136,100 mid-November 2005 vs. 23,250 mid-November 2004). On Department areas and national refuges, the count peaked at 373,600 during the first week of December, up from last year's early December count (202,600) and similar to 2003 (376,400). The 2005-06 Midwinter Survey light goose estimate of 462,100 was similar to 2004-05 (475,700) and 2003-04 (466,500), but lower than 2002-03 (569,900). The number of white-fronted geese observed during the 2005-06 Midwinter Survey (8,500) was within the range of the previous 4 years (5,100 – 12,000).

Duck Harvest:

Mild and dry conditions challenged hunters early. Major migrations in mid to late November resulted in excellent hunting, but it was short-lived as freeze-up occurred in early December through much of the state. Hunting improved in the North Zone when shallow water opened up during the last week of the season. Dry conditions in West Missouri resulted in poor hunting with good habitat mainly found on private and public areas with pumping capability. Dry conditions also limited hunting opportunity in Southeast Missouri, but those places with water reported excellent hunting.

Estimates of duck harvest are based on two sources, the U.S. Fish and Wildlife Service (USFWS) National Waterfowl Harvest Survey and the Missouri Department of Conservation Waterfowl Post-Season Harvest Survey. Typically, USFWS estimates and MDC's post-season harvest estimates are similar (see Appendix A) and we only report the USFWS estimates. Beginning in 2002, the U.S. Fish and Wildlife Service implemented a new survey methodology and their preliminary estimates vary somewhat from MDC's post-season survey estimates, so in Table 2 we report both estimates for the years after 2002.

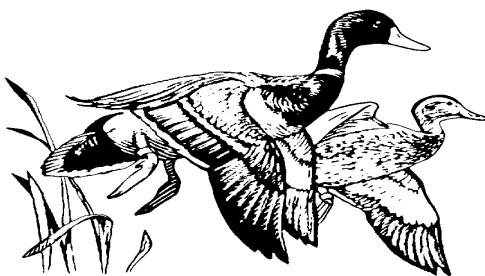


Table 2. Missouri duck harvest (USFWS and MDC Harvest Survey Data).

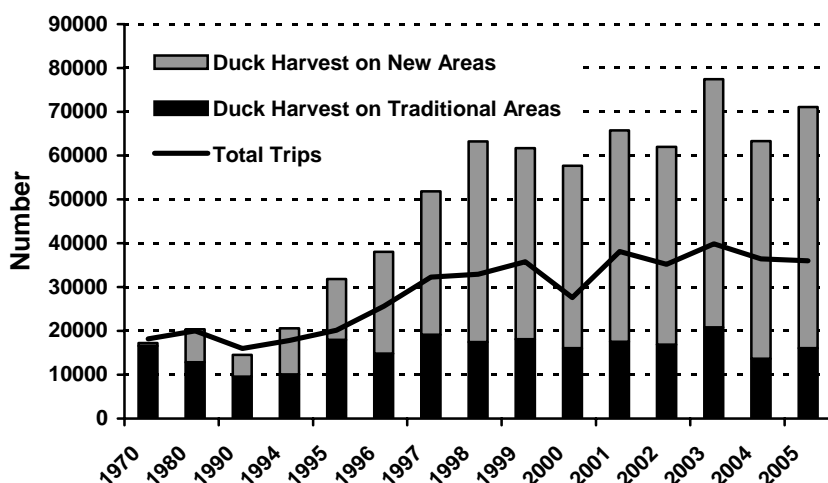
Year	North Zone *	Middle Zone	South Zone	USFWS Estimate (MDC estimate)
1981-84	122,200** (52.5%)	96,500 (41.5%)	13,900 (6.0%)	232,600
1985-87	86,200 (49.3%)	82,400 (47.1%)	6,400 (3.6%)	175,000
1988-93	55,900 (53.5%)	43,000 (41.2%)	5,500 (5.3%)	104,400
1994-96	109,900 (55.7%)	74,800 (37.9%)	12,500 (6.3%)	197,200
1997	186,800 (51.0%)	142,200 (38.8%)	37,200 (10.2%)	366,200
1998	239,600 (52.3%)	167,100 (36.5%)	51,700 (11.3%)	458,400
1999	200,700 (62.2%)	79,700 (24.7%)	42,200 (13.1%)	348,200
2000	256,500 (56.8%)	98,600 (21.9%)	95,700 (21.2%)	404,000
2001	277,100 (60.1%)	114,500 (24.8%)	69,500 (15.1%)	515,100
2002***	74,700 (34.4%)	129,500 (59.6%)	13,100 (6.0%)	217,300 (392,600)
2003***	--	--	--	433,700 (472,000)
2004***	--	--	--	322,700 (396,000)
2005***	146,600 (32.9%)	255,700 (57.4%)	43,600 (9.8%)	447,700 (426,100)

* 3 zones since 1991 ** mean number and % of statewide harvest *** data are preliminary

Numbers of hunters participating in the 2005-06 season (28,700 vs. 2001-05 average of 29,000), trips per hunter (7.7 vs. 2001-05 average of 7.7), and average daily success (2.10 vs. 2001-05 average of 1.80) combined to result in a 2005-06 duck harvest of 447,700 (426,100, MDC estimate), up from 2004 (322,700), and within the range experienced during the last 9 years of liberal seasons (217,300 – 515,100).

On Department areas, hunters harvested 71,100 ducks (36,000 trips) in 2005-06, down only slightly from the record harvest of 77,400 ducks in 2003-04, and within the range of the last 8 years (51,800– 77,400). Hunters averaged 1.98 ducks per trip, just shy of the record daily average of 2.09 set in 2000. Only a small portion of statewide harvest occurs on Department areas. The relationship between public area harvest and statewide harvest in 2005-06 (16.7% of a statewide total of 426,100) was similar to the average of 14.4% (range = 12.4-16.5%) from 1988-1997. During dry years, Department areas with water pumping capabilities typically

Figure 1. Numbers of ducks harvested on Missouri Department of Conservation areas.



Traditional areas = Fountain Grove, Montrose, Duck Creek and Schell-Osage CAs

account for a higher proportion of the duck harvest than during wet years. For example, in 1999-00 (a dry season) 19.1% of the harvest occurred on public areas compared to only 13.9% during the wet fall of 1998-99.

Periods of peak harvest vary depending on

weather, migration timing, and habitat conditions (Figure 2, Figure 3, and Appendices C-E). Hunters in 2005-06 took advantage of significant migrations around 15 November and 29 November (Figure 3). In contrast, only minor migrations occurred during the 2004-05 season and hunter success was much more dependent on local hunting conditions. With a 60-day season in place, the periods of greatest harvest opportunity were included in each of the last five years.

In 2005, cold temperatures and ice limited December hunting in the North Zone, and the state duck harvest peaked in November. Middle Zone hunters took advantage of the entire 60-day season. Although some ice formed in early to mid-December, it did not limit hunting activity to the same extent as in the North Zone. Middle Zone hunters harvested the most ducks during the first week and last weeks of the season. South Zone depended upon freeze/thaw conditions and had variable hunting throughout December and January.

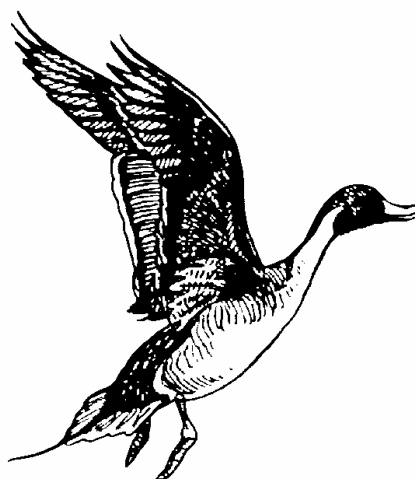


Figure 2. Duck harvest per day by 5-day periods, 2005-06.

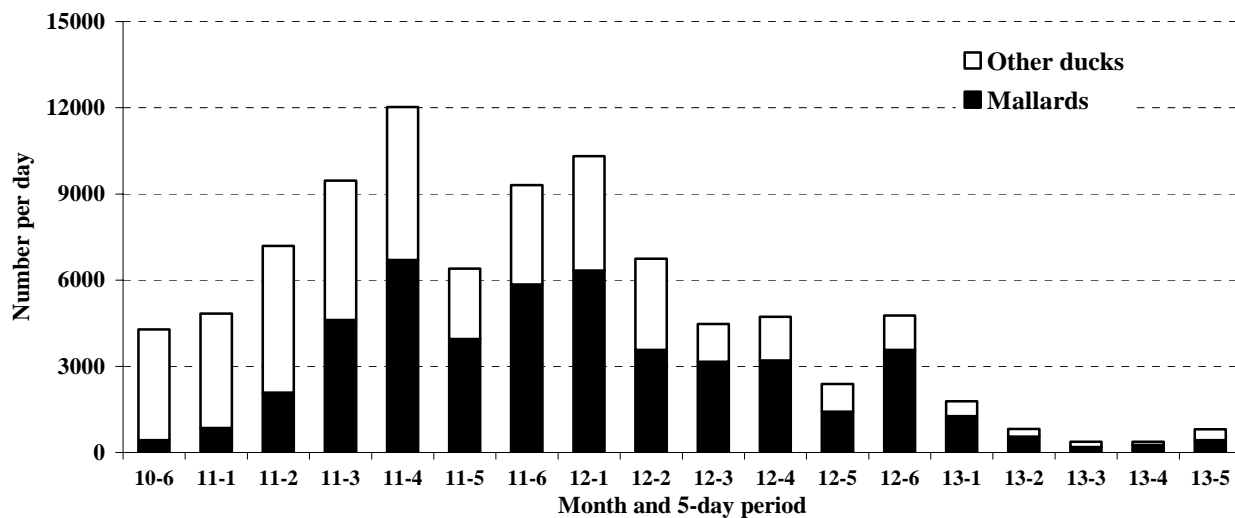
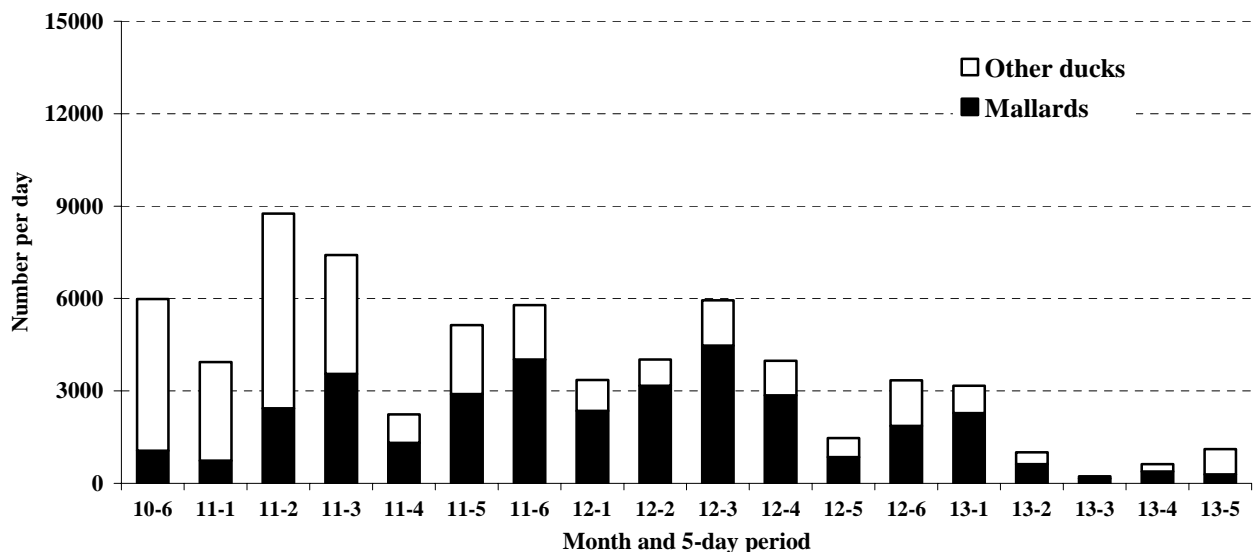


Figure 3. Duck harvest per day by 5-day periods, 2004-05.



Canada Goose Harvest:

After returning to regulations less restrictive than during 2004, more goose hunters went afield (14,584 vs. 12,004 in 2004) and harvested more geese (51,800 vs. 39,535 in 2004, Table 3). The 2005-2006 harvest was within the range of the last five years (39,500 – 76,300). Population size, the number of geese banded, and band recoveries are used to derive the number of geese harvested, by population, from statewide Canada goose harvest estimates. According to these derivations, the proportion of giant Canada geese in the Missouri Canada goose harvest increased from 14% during 1970-1974 to 81% during 2002-2004. These estimates include giants produced in other states and harvested in Missouri. Approximately 38% of the statewide Canada goose

harvest is estimated to be comprised of giant Canada geese produced in Missouri. An additional 42% is comprised of giant Canada geese banded in other states and provinces.

Table 3. Missouri Canada goose harvest (USFWS and MDC Harvest Survey Data).

Years	Swan Lake Zone	Southeast Zone	North Zone	Middle Zone	South Zone	USFW estimate (MDC estimate)
1970-74	35,100 (81.0%)	1,900 (4.4%)	4,900 (11.3%)	900 (2.0%)	500 (1.2%)	43,300
1975-79	52,700 (78.7%)	6,500 (9.7%)	4,200 (6.3%)	2,800 (4.2%)	700 (1.0%)	66,900
1980-86	27,900 (71.4%)	2,400 (6.1%)	4,400 (11.3%)	4,100 (10.5%)	300 (0.8%)	39,100
1987-89	18,000 (58.8%)	1800 (5.9%)	3,000 (9.8%)	5,800 (19.0%)	2,000 (6.5%)	30,600
1990-92	11,100 (36.6%)	4,700 (15.5%)	7,600 (25.1%)	6,600 (21.8%)	300 (1.0%)	30,300
1993-96	6,900 (15.0%)	7,200 (15.8%)	22,000 (48.3%)	8,500 (18.5%)	1,100 (2.4%)	45,700
1998	300 (1.2%)	2,300 (9.3%)	13,800 (56.1%)	1,600 (6.5%)	6,600 (26.8%)	24,600
1999	700 (2.0%)	2,400 (6.8%)	21,200 (59.7%)	6,100 (17.2%)	5,100 (14.4%)	35,500
2000	1,700 (3.6%)	4,500 (9.6%)	26,800 (56.9%)	7,000 (14.9%)	7,100 (15.1%)	47,100 (76,300)
2001	3,100 (4.7%)	0	43,400 (64.3%)	16,000 (23.8%)	5,000 (7.3%)	68,600 (43,900)
2002**	3,300 (13.1%)	274 (1%)	14,500 (57.6%)	4,900 (19.5%)	2,200 (8.7%)	25,200 (44,000)
2003**	--	--	--	--	--	18,500 (56,400)
2004**						8,800 (39,500)
2005**	5,030 (12.9%)	387 (1.0%)	18,958 (48.5%)	12,961 (33.2%)	1,741 (4.4%)	39,270 (51,800)

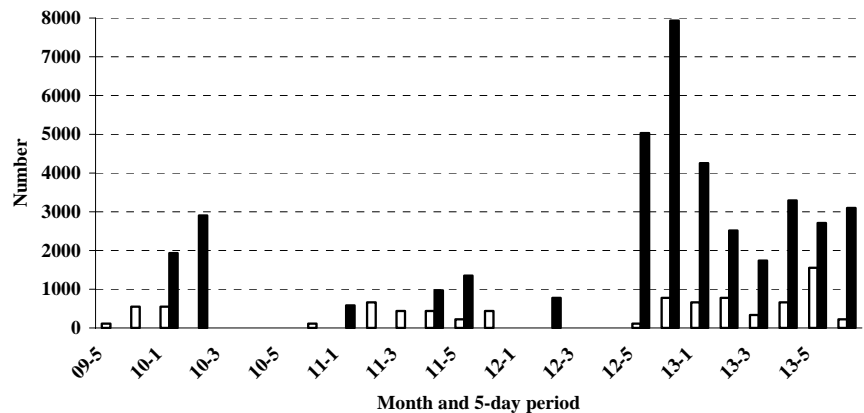
* mean number and % of statewide harvest ** Data are preliminary

Canada geese arrived earlier in Missouri than in recent years. As a result, hunters harvested the most geese during the last week of December and first week of January (Figure 4). They also accounted for a higher than average portion of the total EPP harvest (21.9% vs. 12.9 average from 1991-2004).

The proportion of geese harvested during the last season segment in 2005 (78%) was higher than in 2004 (59%) when the bag limit was reduced to one, but similar to 2003 (75%) and 2002 (74%).

The early season segment continues to provide hunters the opportunity to harvest resident giant Canada geese. In 2005-06, 12% of the season's harvest occurred during the early season (September-early October). Only 9% of the Canada goose harvests occurred from the beginning of duck season until the end of November, which was similar to 2003 (11%) and 2002 (15%). Based on band recoveries from 2001-2003 and 2005, approximately 38% of Missouri giant Canada geese are harvested during the early segment of the goose season.

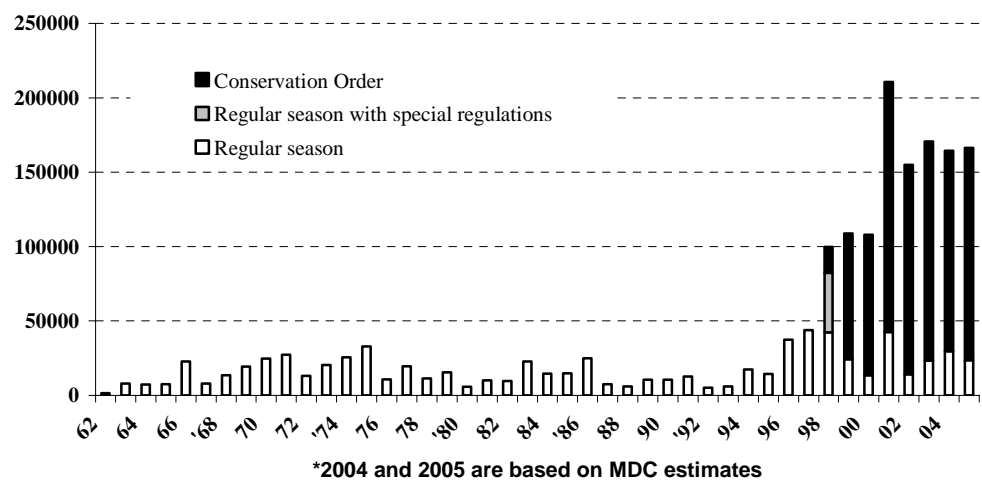
Figure 4. Canada goose harvest by 5-day periods in 2004 & 2005 (FWS Harvest Survey).



Light Goose Harvest:

More liberal light goose hunting regulations after the mid-1990s and the availability of a Conservation Order beginning in February 1999 has resulted in a dramatic increase in the harvest of light geese in Missouri. The light goose harvest increased from an average of just over 11,000 during the early

Figure 5. Missouri light goose harvest: 1962-2005.



1990s (regular hunting season) to a high of 203,200 total light geese harvested (regular season plus Conservation Order) during 2001-2002 (USFWS and MDC harvest estimates) (Figure 5).

Snow goose harvest during the 2005-06 regular season (23,700) was similar to 2004-05 regular season (29,700 geese). The harvest during the 2006 Conservation Order (142,600) was also similar to the previous year (142,500).

White-Fronted Goose Harvest:

The harvest of white-fronted geese in the Mississippi Flyway nearly doubled from an average of about 65,000 during the early 1990s to over 146,000 during 1999. Over 90% of this harvest occurred in the states of Louisiana and Arkansas. In Missouri, the harvest of white-fronted geese is low and unpredictable. The average harvest has dropped from 2,800 white-fronted geese during 1999-2000 to less than 1,000 during 2001-2005. The primary harvest occurs during late season in the Missouri Bootheel.

